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NOTES ON GEOGRAPHIC DISTRIBUTION

Beilschmiedia berteroana (Gay) Kosterm (Lauraceae): A new population of importance for conservation and distribution in the Maule Region of Central Chile

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ABSTRACT: This study reports the location of new populations of *Beilschmiedia berteroana* (Gay) Kosterm in Achibueno, 32 km to southeast of the city of Linares, Maule Region, central Chile. This finding is of utmost importance for the conservation of *B. berteroana* on account of its mass disappearance stemming from the clear cutting and construction of a dam on the Ancoa river in the Maule region. During the months of March to December of 2011 we sampled a population with 25 adult individuals dispersed in approximately 10000 m2 located 40 km to the south of the previously known population in the Bellotos del Melado National Reserve. It is recommended that support be given to new scientific research and work for conservation this species.

Beilschmiedia berteroana is an endemic tree in Chile which forms shadowy woods with a humid-cold interior microclimate with an absence of herbaceous strata and soil covered by abundant leaf litter. Trees can reach a height of 30 m and an average diameter of 27 cm, have aromatic leaves and fruit consists of berries (San Martín *et al.* 2002). Due to their likeness to fruits of the genus *Quercus*, they are called "bellotas" (acorns) and are consumed by swine and occasionally cattle (San Martín *et al.* 2002). Their natural distribution extends from the northern portion of the Province of Melipilla, Metropolitan Regional (Roblería del Cobre de Loncha National Reserve and its surrounding area between 70°55' - 71°12' W, 34°03' - 34°11' S to the Larqui River in the Bio-Bio Region, at 36°43' S, 72°11' W; Hechenleitner *et al*. 2005; Ricci *et al*. 2007), with the largest representation of specimens in the foothills and valleys of the Maule Region (Rodríguez *et al*. 1983; Rodríguez and Quezada 2001).

This tree is highly threatened and is thought to have had a much larger distribution in the past. In the present it has been greatly reduced by the effects of fire, grazing and the transformation of native woods into forestry plantations (Hechenleitner *et al.* 2005). It is protected in the Bellotos del Melao National Reserve (Litton *et al.* 1997) and Roblería del Cobre de Loncha National Reserve, the latter being the only protected site of the sole southern "Belloto" population in the coastal foothills (Ricci *et al.* 2007).

The reduced distribution of *B. berteroana* can be attributed to the constant changes in soil for use in agriculture and forestry as this species is of no commercial lumber value nor of use as firewood (San Martin *et al.* 2002). On account of these conditions, this species is declared to be in danger of extinction (Benoit 1989; IUCN 2001).

The "Belloto" populations found in the Maule Region fall under a scenario which, from the perspective of conservation biology, find themselves in one of the areas whose biodiversity is under greatest threat due to the existence of a large number of flora species in the categories of "In danger of extinction", "Vulnerable" and "Rare" (Olivares *et al.* 2005). It is calculated that only 0.6% of the regional territory is protected by the Chilean State under the System of Protected Areas (SNAPSE) and this area also forms a portion of one of the 34 Global conservation and biodiversity Hotspots (Olivares *et al.* 2005).

In the Maule Region there are five priority sites for the conservation of biodiversity, which are outlined under the national strategy for conservation and biodiversity (CONAMA 2003). Data collection and flower surveys were undertaken in Altos de Achibueno, located 33 km to the southwest of the city of Linares, in the foothills of the

FIGURE 1. Mixed Wood with presence of individuals of *Beilschmiedia berteroana* (Gay) Kosterm. A) Adult individual. B) Detail of the leaves.

Maule Region (MMA-FPA project - 07-042-2011), with the resulting discovery of a small population of "Belloto del Sur" *Beilschmiedia berteroana* (Gay) Kosterm. (Fig. 1A and B) located specifically at 36°09'31" S, 71°18'29.13" W, in the area known as "Vado Azul" (Figure 2). During the months of March to December of 2011 we sampled a population with 25 adult individuals dispersed in approximately 10000 m^2 in Altos de Achibueno and 40 km to the south of the previously known population in the Bellotos del Melado National Reserve. The collected material was deposited in the herbarium of the Department of Botany of the University of Concepción under number 175237.

This finding is of utmost importance to the conservation of the species, on account of its mass disappearance stemming from the clear cutting and posterior construction of a dam on the Ancoa river, for which it is estimated that 1200 individuals were cut (José San Martin and Cristian Alegría, personal communication) from one of the Maule Region largest populations located in the vicinity of Bellotos del Melado National Reserve. Despite its status as a protected species, cutting was authorized under supreme decree 654 of 2009, which has since been overturned.

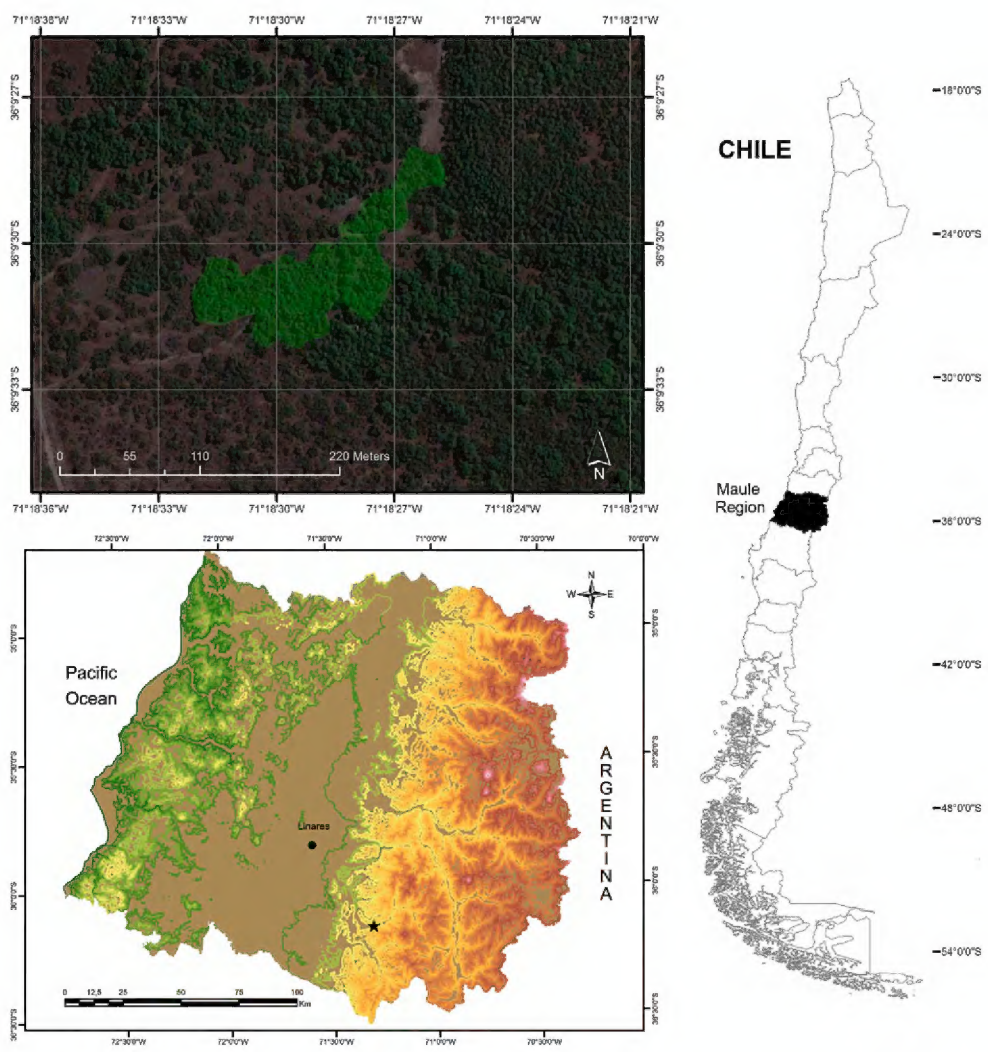

Figure 2. New population of *Beilschmiedia berteroana* (Gay) Kosterm in Altos Achibueno, located in central Chile in the Maule Region.

The new finding in Altos de Achibueno presents new threats owing to the historic loss of biodiversity due to the substitution or loss of native forest, a phenomena which has been studied by Altamirano and Lara (2010), who mention that, in intermediate parts of Andes mountain in the Maule region between 1989 and 2003, the native forest in this zone was reduced by 44%. Furthermore, a large proportion of current exotic plantations are established on soils that previously corresponded to native forest (67%). It is recommended that support be given to new scientific research and work for conservation this species.

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